



# News Release

December 9, 2008

Las Vegas, Nevada –

*"Technologies that RockBats has been promoting for maple bats since 2004 are finally being realized. The independent research conducted by the USDA Forest Service has resulted in changes to the 2009 MLB Bat Supplier Regulations. Those changes include the recommendation to players that maple bats be oriented for face-grain ball contact, which is a stronger orientation for wood baseball bats. Hitting a baseball with the flat-grain of the wood went against the norm that had been established for over 100 years with Ash bats. RockBats has advocated face-grain contact since 2004, and they trademarked this as FORCE Technology™ in 2006, which stands for **Face ORiented Contact Energy**."*

*Roland Hernandez, former Research Engineer with the USDA Forest Service, Forest Products Laboratory, and Founder of RockBats, said: "This is both a sad and joyous day for us at RockBats. After 2 years of being one of the 32 approved MLB bat suppliers, we exhausted our efforts to convince players that face-grain contact was the recommended orientation for maple bats. Today marks a great day in our history, because MLB has adopted technologies that we had been advocating for several years. Sadly, our technology never grew wings, and unless we get enough professional players and teams requesting our bats – we cannot justify pursuing MLB certification in 2009. We've always known that RockBats was THE best hard maple bat available in the professional wood bat industry, and today confirms that fact."*

*We have already developed an all-wood laminated composite bat that will be stronger than any solid-wood bat available today. This laminated RockBat will (again) offer a technology that makes the use of all-wood baseball bats safer for teams, players, and fans.*

*Yet again, we stay true to our motto...*

*"Making the Best Even Better"*

*The all-wood composite RockBat is certain to be the hottest story in 2009!*



Below is the December 9, 2008 MLB News Release (paraphrased):

Major League Baseball (MLB) and the MLB Players Association (MLBPA) announced today that they have adopted the nine recommendations made by the Safety and Health Advisory Committee, which investigated the high rate of broken bats that had been occurring in Major League games.

In July, the Safety and Health Advisory Committee formed an interdisciplinary team of external experts in such areas as wood science, industrial wood product certification, statistical analysis, and laboratory and field testing of baseball bats. The experts were asked to develop a series of recommendations that would reduce the frequency of broken bats. In particular, multi-piece bat failures that fly dangerously into the field of play, and into the stands.

The analysis of the 2,232 broken bats that were sampled from MLB games between July and September showed that the wood characteristic called "slope of grain" played a major factor in the failure of bats that broke into multiple pieces. Bats that fail by slope-of-grain show the characteristic "oval-shaped failure plane", as shown in the AP photo below.



Florida Marlins' Miguel Cabrera hits a broken bat double in the first inning of their baseball game against the San Francisco Giants in San Francisco, Sunday, July 29, 2007. (AP Photo/Marcio Jose Sanchez)

The reason that so many bats are failing are because there is no standardization in the wood bat industry. Manufacturers do not have established guidelines that provide minimum required wood quality levels.

To address the slope-of-grain issue, the interdisciplinary team compiled nine recommendations to reduce the frequency of multi-piece bat failures, all of which have been adopted for 2009:

1. All bats must conform to slope of grain wood grading requirements which apply to the 2/3 length of the billet that will constitute the handle and taper region of the bat. All manufacturers must identify and grade the handle end prior to production of the bat to ensure that its slope of grain satisfies the grading requirement.

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**Note for #1:** Based on our wood science background, RockBats developed a wood grading system for our baseball bat blanks that was based on the wood characteristic called "slope-of-grain". The slope-of-grain value that has been used by RockBats since 2002 assures that bats achieve a target impact bending strength level that is 90% of the strength of perfectly straight-grained wood (as if it was split). The independent research that was conducted by the USDA Forest Service resulted in a similar grading concept based on slope-of-grain.

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2. All manufacturers must place an ink dot on the tangential face of the handle of sugar maple (a.k.a. hard maple) and of yellow birch bats before finishing. Placing an ink dot enables a person to easily view the slope of grain of the wood.
3. The orientation of the hitting surface on sugar maple and yellow birch bats should be rotated 90° (one quarter turn of the bat). The edge grain in maple that is currently used as the hitting surface is the weaker of the two choices. To facilitate such a change in the hitting surface, manufacturers must place their logos 90°.

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**Note for #3:** RockBats has been the ONLY manufacture advocating face-grain contact for maple bats since 2004, and they trademarked it as **FORCE Technology™** in 2006. All other manufacturers who entered the marketplace with maple bats have been manufacturing their bats using the same techniques that had been developed for Ash bats for the past 100 years.

## **FORCE Technology™** stands for **Face-ORiented Contact Energy**

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4. Handles of sugar maple and yellow birch bats must be natural or clear finish to allow for inspection of the slope of grain in the handles.
5. Manufacturers must implement a method of tracking each bat they supply (e.g. serial number) so that each can be linked back to the manufacturer's production records.
6. Representatives of each authorized manufacturer should be required to participate in an MLB-sponsored workshop on the engineering properties and grading practices of wood as they relate to the manufacture of solid-wood baseball bats.
7. Manufacturers should be visited on a regular basis by MLB or its designated representatives to audit each company's manufacturing processes and recordkeeping with respect to bat traceability.
8. Audits should be randomly conducted of bats by MLB or its designated representatives at the ball parks to ensure that the new bat requirements are being followed.
9. A formalized third-party bat certification and quality control program should be established to certify new suppliers, approve new species of wood, provide training and education to bat manufacturers, and address issues of non-compliance.

The team of experts believes that implementation of these recommendations will have an immediate impact in the 2009 season on reducing the frequency of bats breaking and the number of bats breaking into multiple pieces.

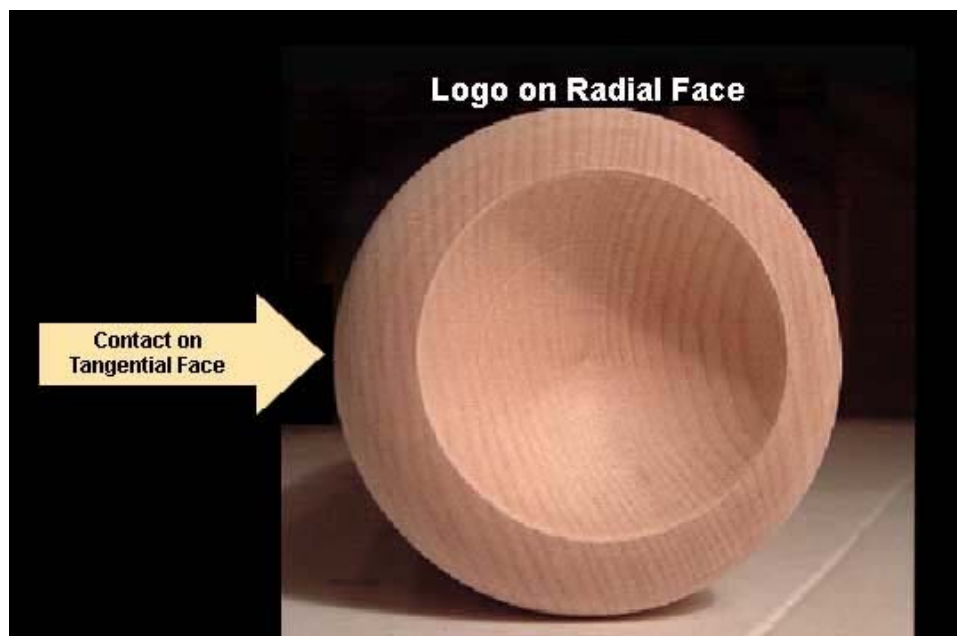
The research and analysis by the team of experts will continue during the off-season and throughout the 2009 regular season, including the collection and review of additional data. The experts will examine potential ways to reduce the incidents of multi-piece failures even further, which may include studying wood drying methods, moisture content, and the durability of specific bat models.

### **Executive Summary of RockBats**

RockBats, LLC was founded in 2002 by Roland Hernandez, a Research Engineer from the USDA Forest Service, Forest Products Laboratory. The motivation to create RockBats existed because ALL bat manufacturers were producing hard maple bats using the same techniques that had been developed for white ash for over 100 years. RockBats saw the opportunity to create the ONLY solid-wood hard maple baseball bat that was specifically designed to take advantage of the difference between hard maple and white ash. RockBats is unique due to the following:

- Based on past research data and in-house testing, RockBats determined that hard maple baseball bats are strongest when contact with the baseball is made on the flat-grain face (tangential face). RockBats are labeled with their logo on the edge-grain face (radial face), and players are instructed to still hit LOGO UP – resulting in face-grain contact.

This is contrary to what has been done with white ash bats for over 100 years.



RockBats tests every bat and locates the sweet spot on the barrel. A small diamond sticker is placed at the sweet spot, and this serves as a training aid to young players. Because no two pieces of solid-wood are alike, this means that no two solid-wood baseball bats are alike. Bats having the same shape and weight can have differing sweet spot locations.



No other baseball bat company identifies the sweet spot location on the barrel of the bat.

Young players and their coaches have provided us feedback that knowing the sweet spot location on the barrel is a terrific training aid. The sweet spot sticker makes RockBats a highly-popular wood baseball bat in the amateur and high school leagues.

RockBats has trademarked these two unique features and has called it **FORCE Technology™**.

## Face-ORiented Contact Energy



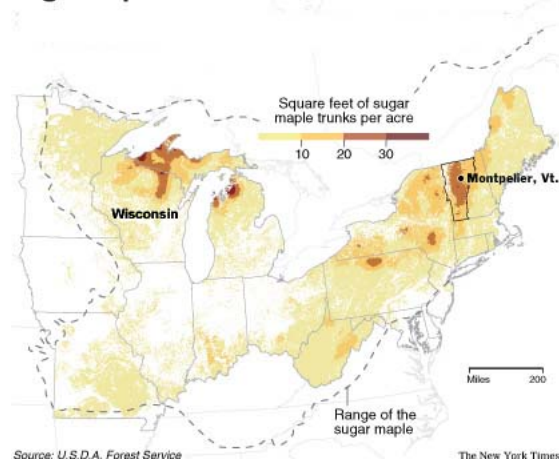
## Where is RockBats?

RockBats is located in the state of Wisconsin, where Hard maple is the state tree. The Forest Service map below shows that Wisconsin has some of the highest density growing areas for Hard maple.



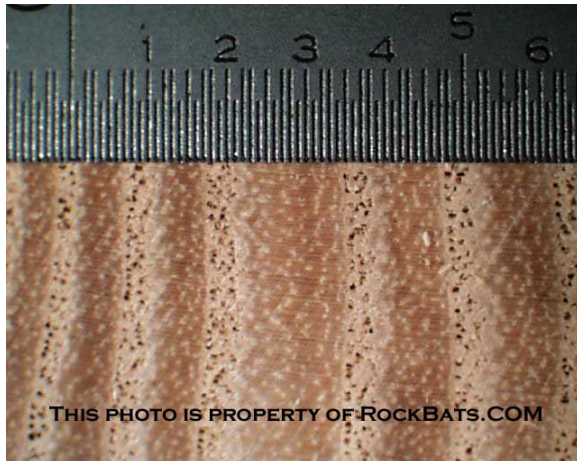
New York Times took the above information and created a more reader-friendly map of Hard maple growing regions. Note that the RockBats manufacturing plant is located in one of the highest density Hard maple growing-stock regions.

### Sugar Maple Tree Distribution



## RockBats based on Wood Science and Engineering

We understood the difference between White ash and Hard maple structure, and realized that all hard maple bat manufacturers were applying White ash manufacturing techniques to Hard maple bats.



White Ash (*Fraxinus americana*) has end grain with open wood cells in the annual rings. This is referred to as a ring-porous species. Other species that are ring porous include Red Oak, White Oak, and Elm.



Sugar Maple (*Acer saccharum*) has end grain with closed wood cells in the annual rings. This is referred to as a diffuse-porous species. Other species that are diffuse porous include Yellow Birch and Basswood.

Hard maple bats do not flake like White ash bats (shown at right), so the obvious question was

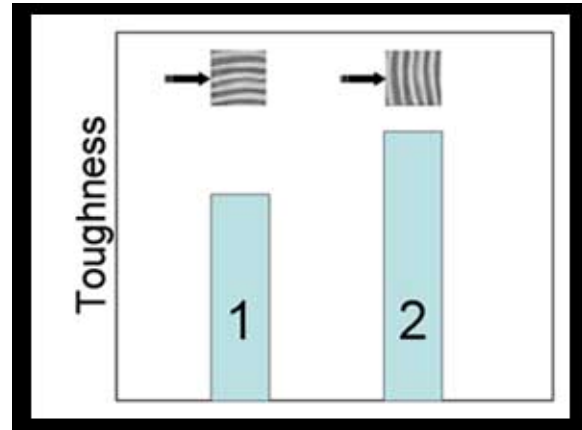
"What is the best orientation to hit with a hard maple bat?"

**This led to the creation of FORCE Technology™.**

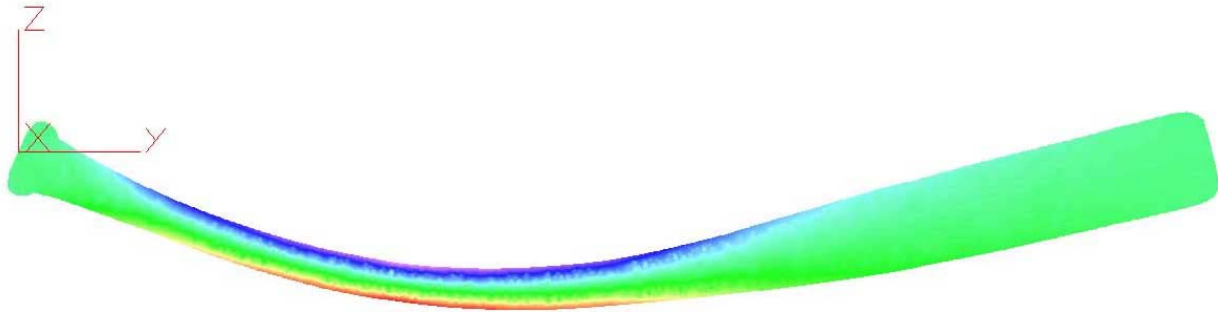
**Face-ORiented Contact Energy.**



Past Forest Service research data, and RockBats in-house testing indicated that FORCE Technology™ applied to Hard Maple baseball bats can increase their durability by approximately 15 to 30%.



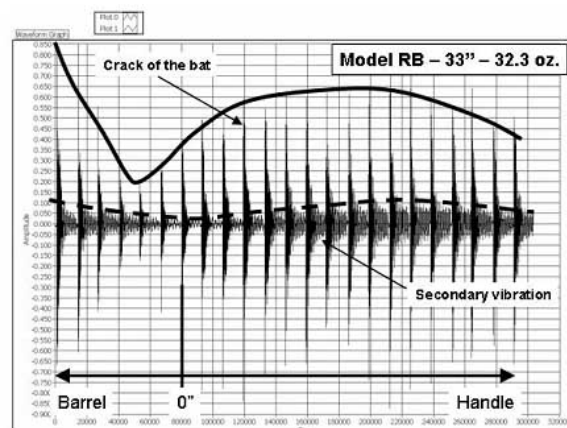
We also have the engineering background to conduct advanced finite element stress analyses of solid-wood baseball bats. This is a capability that is not available at most wood bat manufacturers (if any). Finite element analysis can be used to determine if certain bat shapes are more prone to breakage than others. The image below is an exaggerated deflected view of a bat under stress.



RockBats has also conducted in-house tests to quantify the vibration that occurs when a ball hits a bat.

The image at the right shows the vibration peaks that occur when a ball hits at every inch along the length of the barrel. The minimum peaks and the 0" location is the zone referred to as the "sweet spot".

As contact is made approximately 4 to 6 inches away from the sweet spot, the vibration reaches a maximum.



Once again, we emphasize that the RockBats Science and Engineering background that is presented here is not offered by any of the wood bat manufacturers.



### RockBats Manufacturing

The RockBats manufacturing facility is a 3<sup>rd</sup>-generation business operating since 1924, named Zelazoski Wood Products, Inc (ZWPI). The 36,000 square foot main building houses the lathe capacity that can output unfinished/sanded bats every 1 to 2 minutes. The family-owned ZWPI business joined the RockBats ownership group in 2007. The RockBats manufacturing facility does not produce baseball bats for any other bat company – they are produced solely for RockBats.



There are several buildings on the ZWPI campus, which include warehouse storage, processing from rough lumber to final billet, and on-site kiln-drying capabilities.



RockBats uses a pre-catalyzed water-based urethane finish that is produced by a Wisconsin company. The water-based urethane can be promoted as an eco-friendly finish that is easy to clean up and not harmful to the environment.

End cupping of baseball bats is conducted after the stain and finish are applied, to reveal the natural wood on the end of the bat. This provides a “window” for the player to see the quality of wood used in RockBats. This natural-finish cup also highlights the Face-Oriented Contact of RockBats... see below how the annual rings are oriented compared to the logo and sweet spot sticker placement.



Through 2008, RockBats has only manufactured Black, Natural, and Walker-finished bats. The RockBats logo is applied using Pad Printing technology... the same process used for golf balls. This produces an ink-stamped logo that has a zero-thickness and can be protected under the finish.



Major League Baseball only allows Black, Brown, and Natural finish for all of their bats. RockBats has not ever had any plans to expand to offer a wide spectrum of colors available. We intend to be viewed as a Professional baseball bat company, and we do not produce stain colors that are not approved for MLB. If we were to add another color to our inventory today, it would only be Brown.



## Baseball Experience

No baseball bat company is complete without the experience of a Major League Baseball player. Mike and Christy Kingery joined the RockBats ownership group in 2006.

**Mike Kingery** played professional baseball for 17 years, including stints with the Kansas City Royals, Seattle Mariners, San Francisco Giants, Oakland A's, Colorado Rockies, and Pittsburgh Pirates. During his career, he nearly won the National League batting title before the strike shortened the season in 1994 (*he was hitting .349 at the time*), he combined with Roberto Mejia to hit the first-ever back-to-back home runs at Coors Field, and he played alongside All-Star outfielders including Bo Jackson, Ken Griffey Jr., Dante Bichette, and Larry Walker.

Mike was a highly decorated athlete when he graduated from Atwater High School in 1979, winning All-State awards in football, baseball, and track and field. He was signed as a free agent out of high school by the Kansas City Royals, but attended St. Cloud State University for his education. He progressed through the Royals' minor league system and eventually earned a starting spot in centerfield in 1986, before being traded to Seattle, where he again played centerfield, only to give way to Ken Griffey Jr. Mike enjoyed the best years of his career in Colorado from 1994-1995.

Upon retiring from the Pittsburgh Pirates in 1996, Mike and his family moved back to his hometown. In 1997, Mike created **Solid Foundation Baseball School, Inc.** to answer strong demand from local baseball teams and players. Mike has trained [professional baseball instructors](#) using [hands-on instruction techniques](#) he learned in the big leagues, helping players maximize their abilities and understand the basic fundamentals of the game.

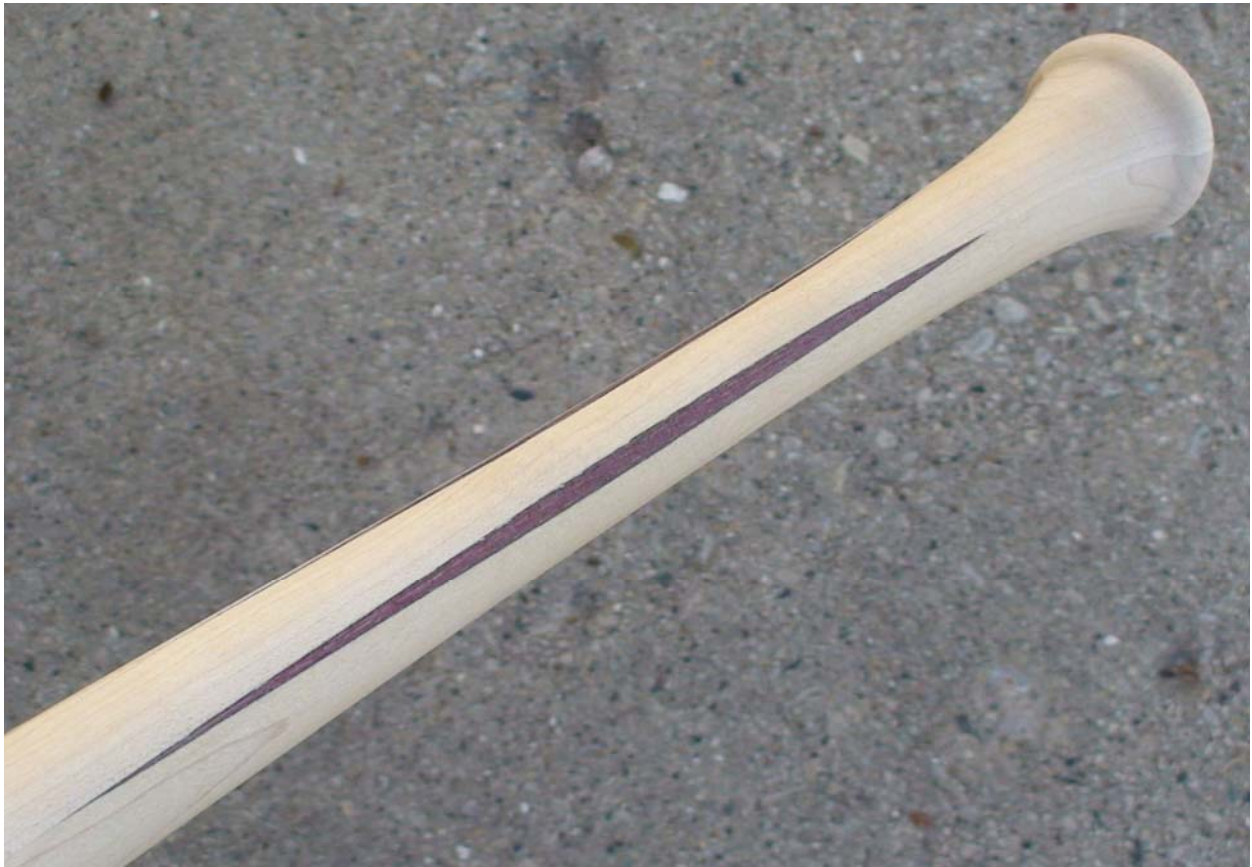


When developing a new RockBat baseball bat design, all prototype bats are placed in Mike's hands to be evaluated for its performance and feel.

### **The New All-Wood Composite RockBat**

Available in January 2009, this bat was design to withstand the high stresses of high-speed baseball impact, yet have the flexibility of being offered in a wide variety of bat shapes, including large-barrel, thin-handle shapes.

The unique design of this bat makes it look like a pool cue handle... with reinforcing wood in the handle for added strength. The type of wood used and the way that it is constructed is custom tailored for various bat models.



## *Biography*

Roland Hernandez is a Structural Engineer involved in Engineered Wood Products Research and Development in Monona, WI. Mr. Hernandez spent 17+ years as a Research General Engineer at the USDA Forest Service, Forest Products Laboratory in Madison, WI. His research goals focused on laminated wood, such as glued-laminated timber (glulam) and finger-jointed lumber, where he authored or co-authored over 50 publications relating to that subject. Working closely with industry manufacturers, Mr. Hernandez's research led to the development of probabilistic computer models for predicting the strength performance of glulam, new standards for hardwood glulam, and development of the strongest glued-laminated timber beams available in the industry today. He was the recipient of the L.J. Markwardt Award in 1992 for the outstanding research paper of the year in the Forest Products and Wood and Fiber Science Journals. Mr. Hernandez has been involved in International Forestry activities involving the North American Forestry Commission and the RainForest Alliance to develop programs that promote the better utilization and sustainable management of forest products.

In 2002, while still a Research General Engineer with the Forest Service, Mr. Hernandez founded a hard maple baseball bat company, named RockBats. Based on wood science and technology, the RockBat baseball bat was designed to take advantage of the diffuse-porous nature of hard maple. RockBats offered hard maple baseball bats that advocated face-grain contact, which was trademarked as FORCE Technology™, and they still are the only bats to this day that identify the actual sweet spot on the barrel of every bat.

In September 2007, Mr. Hernandez left the Forest Service to join a wood products certification company named TECO as Senior Engineer in the Technical Division. The special project developed by Mr. Hernandez was to approach Major League Baseball with the concept of a certification program for wood baseball bats. Within 2 months, TECO had a signed contract with Major League Baseball and was receiving and analyzing all of the 2200+ broken bats that were sample in MLB games between July 2 and September 7 of 2008.

In November 2008, Mr. Hernandez left TECO to continue developing his research and development program for engineered wood products. Upon his return to RockBats, Mr. Hernandez designed the all-wood composite RockBats, which will be marketed in 2009 as the strongest all-wood baseball bat in the industry.

Roland Hernandez received his Bachelor's (1988) and Master's (1990) Degrees in Agricultural Engineering, with emphasis on the use of Wood as a Structural Engineering Material from Texas A&M University. While at the USDA Forest Service, Forest Products Laboratory, Mr. Hernandez completed all of his coursework and research towards a Ph.D. degree in the Civil Engineering Department at the University of Wisconsin – Madison.





*Roland Hernandez atop the USDA Forest Products Laboratory in  
Madison, WI (June, 2007 photo by Paula White)*